

In-flight Analysis - Concorde (SW)  
 100ft above Sea Level, 29.92inHg, 90°F

Motor: Model Motors AXI 2208/26; 1420rpm/V; 0.6A no-load; 0.155 Ohms.  
 Battery: Kokam 1250 15C/30C (SLPB554374H); 3 cells; 1250mAh @ 3.7V; 0.012 Ohms/cell.  
 Speed Control Castle Creations Phoenix 25; 2 controls (separate); 0.0065 Ohms; Low rate.  
 Drive System: APC 6' and 9' Props; 2 motors (parallel); 6x4 (Pconst=1.11; Tconst=1) direct drive.  
 Airframe: Concorde (SW); 323sq.in; 21.4oz; 9.5oz/sq.ft; Cd=0.038; Cl=0; Clopt=0.25; CImax=0.72.  
 Stats: 96 W/lb in; 77 W/lb out; 19mph stall; 32mph opt @ 78% (13:10, 120°F); 989ft/min @ 20.3°; -636ft/min @ -12.9°.

| AirSpd (mph) | Drag (oz) | Batt Amps | Motor Amps | Motor Volts | Input (W) | Loss (W) | MGBOut (W) | MotGlb Ef(%) | Shaft Ef(%) | Prop RPM | Thrust (oz) | PSpd (mph) | Prop Ef(%) | Total Ef(%) | Time (m:s) |
|--------------|-----------|-----------|------------|-------------|-----------|----------|------------|--------------|-------------|----------|-------------|------------|------------|-------------|------------|
| 0            | 0.00      | 12.00     | 12.00      | 10.60       | 127.90    | 24.80    | 103.10     | 80.6         | 77.2        | 13,513   | 19.80       | 51.20      | 0.00       | 0.00        | 06:14      |
| 1            | 0.00      | 12.00     | 12.00      | 10.60       | 127.90    | 24.80    | 103.10     | 80.6         | 77.2        | 13,513   | 19.60       | 50.20      | 2.40       | 1.80        | 06:14      |
| 2            | 0.00      | 12.00     | 12.00      | 10.60       | 127.90    | 24.80    | 103.10     | 80.6         | 77.2        | 13,513   | 19.40       | 49.20      | 4.70       | 3.60        | 06:14      |
| 3            | 0.00      | 12.00     | 12.00      | 10.60       | 128.00    | 24.80    | 103.20     | 80.6         | 77.2        | 13,512   | 19.20       | 48.20      | 6.90       | 5.40        | 06:14      |
| 4            | 0.00      | 12.10     | 12.10      | 10.60       | 128.10    | 24.80    | 103.20     | 80.6         | 77.2        | 13,510   | 19.10       | 47.20      | 9.20       | 7.10        | 06:13      |
| 5            | 0.10      | 12.10     | 12.10      | 10.60       | 128.20    | 24.90    | 103.30     | 80.6         | 77.2        | 13,508   | 18.90       | 46.20      | 11.30      | 8.80        | 06:13      |
| 6            | 0.10      | 12.10     | 12.10      | 10.60       | 128.30    | 24.90    | 103.40     | 80.6         | 77.2        | 13,505   | 18.70       | 45.20      | 13.50      | 10.40       | 06:13      |
| 7            | 0.10      | 12.10     | 12.10      | 10.60       | 128.40    | 24.90    | 103.50     | 80.6         | 77.2        | 13,502   | 18.60       | 44.10      | 15.60      | 12.00       | 06:12      |
| 8            | 0.20      | 12.10     | 12.10      | 10.60       | 128.60    | 24.90    | 103.60     | 80.6         | 77.2        | 13,500   | 18.40       | 43.10      | 17.60      | 13.60       | 06:12      |
| 9            | 0.20      | 12.10     | 12.10      | 10.60       | 128.70    | 25.00    | 103.70     | 80.6         | 77.1        | 13,497   | 18.20       | 42.10      | 19.60      | 15.10       | 06:11      |
| 10           | 0.30      | 12.10     | 12.10      | 10.60       | 128.90    | 25.00    | 103.90     | 80.6         | 77.1        | 13,494   | 18.00       | 41.10      | 21.50      | 16.60       | 06:11      |
| 11           | 0.40      | 12.10     | 12.10      | 10.60       | 129.00    | 25.00    | 104.00     | 80.6         | 77.1        | 13,491   | 17.90       | 40.10      | 23.40      | 18.10       | 06:11      |
| 12           | 0.40      | 12.20     | 12.20      | 10.60       | 129.10    | 25.10    | 104.10     | 80.6         | 77.1        | 13,489   | 17.70       | 39.10      | 25.30      | 19.50       | 06:10      |
| 13           | 0.50      | 12.20     | 12.20      | 10.60       | 129.20    | 25.10    | 104.10     | 80.6         | 77.1        | 13,486   | 17.50       | 38.10      | 27.10      | 20.90       | 06:10      |
| 14           | 0.60      | 12.20     | 12.20      | 10.60       | 129.30    | 25.10    | 104.20     | 80.6         | 77.1        | 13,484   | 17.30       | 37.10      | 28.90      | 22.30       | 06:10      |
| 15           | 0.70      | 12.20     | 12.20      | 10.60       | 129.40    | 25.10    | 104.30     | 80.6         | 77.1        | 13,483   | 17.10       | 36.10      | 30.60      | 23.60       | 06:09      |
| 16           | 0.80      | 12.20     | 12.20      | 10.60       | 129.40    | 25.10    | 104.30     | 80.6         | 77.1        | 13,482   | 16.90       | 35.10      | 32.20      | 24.90       | 06:09      |
| 17           | 0.90      | 12.20     | 12.20      | 10.60       | 129.50    | 25.10    | 104.30     | 80.6         | 77.1        | 13,482   | 16.80       | 34.10      | 33.90      | 26.10       | 06:09      |
| 18           | 1.00      | 12.20     | 12.20      | 10.60       | 129.40    | 25.10    | 104.30     | 80.6         | 77.1        | 13,483   | 16.50       | 33.10      | 35.40      | 27.30       | 06:09      |
| 19           | 1.10      | 12.20     | 12.20      | 10.60       | 129.20    | 25.10    | 104.10     | 80.6         | 77.1        | 13,487   | 16.30       | 32.10      | 36.90      | 28.50       | 06:10      |
| 20           | 1.20      | 12.10     | 12.10      | 10.60       | 128.90    | 25.00    | 103.90     | 80.6         | 77.1        | 13,493   | 16.10       | 31.10      | 38.40      | 29.60       | 06:11      |
| 21           | 1.30      | 12.10     | 12.10      | 10.60       | 128.40    | 24.90    | 103.50     | 80.6         | 77.2        | 13,502   | 15.80       | 30.10      | 39.80      | 30.70       | 06:12      |
| 22           | 1.50      | 12.00     | 12.00      | 10.60       | 127.90    | 24.80    | 103.10     | 80.6         | 77.2        | 13,513   | 15.60       | 29.20      | 41.20      | 31.80       | 06:14      |
| 23           | 1.60      | 12.00     | 12.00      | 10.60       | 127.30    | 24.70    | 102.60     | 80.6         | 77.2        | 13,525   | 15.30       | 28.20      | 42.50      | 32.80       | 06:16      |
| 24           | 1.80      | 11.90     | 11.90      | 10.60       | 126.50    | 24.50    | 102.00     | 80.6         | 77.2        | 13,541   | 15.00       | 27.30      | 43.70      | 33.80       | 06:18      |
| 25           | 1.90      | 11.80     | 11.80      | 10.60       | 125.50    | 24.30    | 101.20     | 80.6         | 77.3        | 13,560   | 14.70       | 26.40      | 44.90      | 34.70       | 06:21      |
| 26           | 2.10      | 11.70     | 11.70      | 10.60       | 124.50    | 24.10    | 100.40     | 80.7         | 77.3        | 13,581   | 14.30       | 25.40      | 46.10      | 35.60       | 06:25      |
| 27           | 2.20      | 11.60     | 11.60      | 10.60       | 123.30    | 23.80    | 99.40      | 80.7         | 77.4        | 13,605   | 14.00       | 24.50      | 47.20      | 36.50       | 06:29      |
| 28           | 2.40      | 11.40     | 11.40      | 10.70       | 121.90    | 23.60    | 98.40      | 80.7         | 77.4        | 13,631   | 13.70       | 23.60      | 48.20      | 37.30       | 06:33      |
| 29           | 2.60      | 11.30     | 11.30      | 10.70       | 120.50    | 23.30    | 97.20      | 80.7         | 77.5        | 13,659   | 13.30       | 22.70      | 49.20      | 38.10       | 06:38      |
| 30           | 2.70      | 11.20     | 11.20      | 10.70       | 118.90    | 23.00    | 96.00      | 80.7         | 77.5        | 13,690   | 12.90       | 21.90      | 50.20      | 38.90       | 06:43      |
| 31           | 2.90      | 11.00     | 11.00      | 10.70       | 117.30    | 22.60    | 94.60      | 80.7         | 77.6        | 13,722   | 12.60       | 21.00      | 51.10      | 39.60       | 06:49      |
| 32           | 3.10      | 10.80     | 10.80      | 10.70       | 115.50    | 22.30    | 93.20      | 80.7         | 77.6        | 13,757   | 12.20       | 20.10      | 51.90      | 40.30       | 06:56      |
| 33           | 3.30      | 10.60     | 10.60      | 10.70       | 113.40    | 21.90    | 91.50      | 80.7         | 77.6        | 13,796   | 11.80       | 19.30      | 52.70      | 40.90       | 07:04      |
| 34           | 3.50      | 10.40     | 10.40      | 10.70       | 111.20    | 21.50    | 89.70      | 80.6         | 77.7        | 13,839   | 11.40       | 18.40      | 53.50      | 41.50       | 07:13      |
| 35           | 3.70      | 10.20     | 10.20      | 10.70       | 108.70    | 21.10    | 87.60      | 80.6         | 77.7        | 13,886   | 10.90       | 17.60      | 54.20      | 42.10       | 07:23      |
| 36           | 4.00      | 9.90      | 9.90       | 10.70       | 106.10    | 20.70    | 85.40      | 80.5         | 77.7        | 13,937   | 10.50       | 16.80      | 54.80      | 42.60       | 07:34      |
| 37           | 4.20      | 9.60      | 9.60       | 10.70       | 103.20    | 20.20    | 83.00      | 80.4         | 77.7        | 13,991   | 10.00       | 16.00      | 55.40      | 43.10       | 07:48      |
| 38           | 4.40      | 9.30      | 9.30       | 10.70       | 100.10    | 19.70    | 80.40      | 80.3         | 77.7        | 14,049   | 9.60        | 15.20      | 56.00      | 43.50       | 08:03      |
| 39           | 4.60      | 9.00      | 9.00       | 10.70       | 96.80     | 19.20    | 77.60      | 80.1         | 77.6        | 14,110   | 9.10        | 14.40      | 56.50      | 43.90       | 08:20      |
| 40           | 4.90      | 8.70      | 8.70       | 10.80       | 93.30     | 18.70    | 74.60      | 79.9         | 77.5        | 14,174   | 8.60        | 13.70      | 57.00      | 44.20       | 08:39      |
| 41           | 5.10      | 8.30      | 8.30       | 10.80       | 89.60     | 18.20    | 71.40      | 79.7         | 77.3        | 14,242   | 8.10        | 12.90      | 57.50      | 44.40       | 09:01      |
| 42           | 5.40      | 7.90      | 7.90       | 10.80       | 85.70     | 17.70    | 68.00      | 79.3         | 77.1        | 14,313   | 7.60        | 12.20      | 57.90      | 44.60       | 09:27      |
| 43           | 5.60      | 7.60      | 7.60       | 10.80       | 81.60     | 17.20    | 64.40      | 78.9         | 76.8        | 14,386   | 7.00        | 11.50      | 58.30      | 44.70       | 09:56      |
| 44           | 5.90      | 7.10      | 7.10       | 10.80       | 77.30     | 16.80    | 60.50      | 78.3         | 76.3        | 14,463   | 6.50        | 10.80      | 58.60      | 44.80       | 10:30      |

Note: Motor performance calculations take ambient temperature and heating effects into account.

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